

Metropolitan Government  
of Nashville and Davidson County

John Cooper, Mayor  
Velvet Hunter, Interim Director



Department of General Services

Richard H. Fulton Campus  
730 2<sup>nd</sup> Avenue South  
P.O. Box 196300  
Nashville, TN 37219-6300  
615-862-5050, 615-862-5035 (Fax)

June 23, 2021

Metropolitan Government Clerk's Office  
Metropolitan Courthouse  
1 Public Square, Suite 205  
Nashville, TN 37201

Dear Honorable Members of the Metropolitan Government of Nashville & Davidson County Council:

In accordance with Section 16.60.110 of the Metropolitan Code, the Department of General Services is herewith providing an annual report for calendar year 2020 describing the environmental performance and operation of the 21 LEED® (i.e., "high performance") buildings that the department manages. Note that 2020 was an unusual year as the pandemic restricted building operating hours and occupancy resulting in some buildings using less energy and water for both the General Services' LEED facilities as well as the comparison buildings.

The annual report requirements for LEED® buildings include:

1. The LEED® building's energy and water use compared to a non-LEED® building of similar size and use within the area of the metropolitan government;
2. The LEED® building's estimated energy and water cost savings compared to a non-LEED® building of similar size and use within the area of the metropolitan government.

The high performance buildings that are presented in this annual report are those for which a minimum of one year of energy data is available and include the following:

High Performance Building	Opening Date	LEED® level
Fire - Station #3	October 2012	LEED® Gold
Fire - Station #11	January 2014	LEED® Gold
Fire - Station #19	December 2015	LEED® Platinum
Fire - Station #20	October 2015	LEED® Silver
Fire - Station #21	November 2013	LEED® Silver
Fire - Station #30	June 2013	LEED® Silver
Fire - Station #31	September 2012	LEED® Gold
Fire - Station #33	April 2013	LEED® Silver
Fire - Station #35	September 2011	LEED® Silver
Police - Midtown Hills Precinct	August 2014	LEED® Gold
Police - West Precinct	December 2011	LEED® Gold
Police - Madison Precinct & Crime Lab	January 2014	LEED® Silver
Howard Office Building	December 2010	LEED® Silver

Lindsley Hall	April 2010	LEED® Silver
MAC - Douglass Head Start	February 2014	LEED® Silver
Highland Heights - KIPP Academy	August 2014	LEED® Silver
Library - Bellevue Branch	January 2015	LEED® Gold
Southeast Davidson Library & Community Center	October 2014	LEED® Gold
Lentz Public Health Center	July 2014	LEED® Silver
Police - Headquarters & Family Safety Center	January 2019	LEED® Gold
Bellevue Community Center	September 2020	LEED® Silver

The Energy Utilization Index (EUI) of each LEED® building was calculated and compared to similar size and use non-LEED® buildings as well as regional benchmarks. The EUI is expressed as energy consumed in one year (measured in thousands of British thermal units or kBtu) divided by the total square footage of the building. A building’s EUI varies due to factors such as age, use, controls, envelope efficiency, climate, etc. Generally, a low EUI signifies good energy performance, but certain property types will always have a higher EUI than others. For example, Police Precincts that operate 24/7 will have a higher EUI than office buildings that are in use during business hours.

The EUI of each Metro LEED® building was also compared to a regional benchmark for that type of building. Benchmark EUI data was obtained from the U.S. Department of Energy’s 2012 Commercial Building Energy Consumption Survey (CBECS). CBECS is a national sample survey of U.S. commercial buildings. The EUI by building type for the Southern region was used as the regional benchmark.

In summary, for the 21 high performance buildings reviewed in this report, Metro General Services in 2020 saved a total of more than 7,400,000 kBtu energy and avoided energy costs of more than \$250,000 compared to the non-LEED® comparable buildings.

Of the 19 facilities where non-LEED® comparable buildings with water consumption readings were available, the high performance buildings saved a total of more than 1,700,000 gallons of water, avoiding more than \$8,000 in water cost.

Please feel free to contact me with any questions.

Sincerely,

*Velvet Hunter*

Velvet Hunter

Interim Director, Department of General Services

# Metro Department of General Services' Summary Report

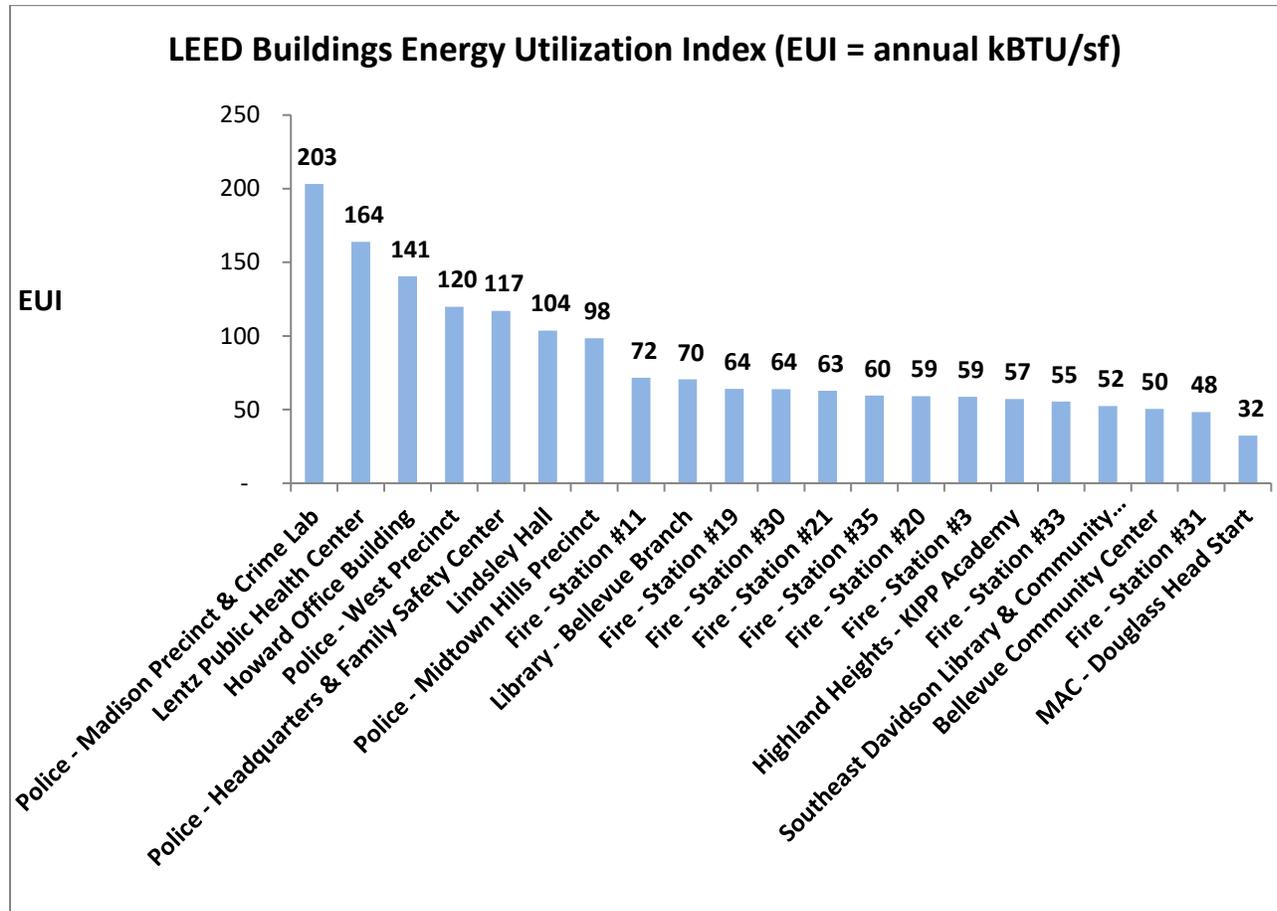
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For calendar year 2020, Metro spent \$2,098,289 on energy (\$1,843,397 for electricity, \$254,892 for natural gas) and \$243,465 on water for the 21 LEED® buildings with a total area of 996,245 square feet. The utility consumption and cost per building are as follows:

High Performance Building	Building Sq. Ft.	Electricity (kWh)	Electricity cost	Gas (therms)	Gas cost	Water (gallons)	Water cost
Fire - Station #3	17,469	260,012	\$27,286.31	1,375	\$1,592.94	175,792	\$6,485.91
Fire - Station #11	15,587	237,175	\$24,067.47	3,079	\$2,871.66	183,272	\$6,768.56
Fire - Station #19	20,142	289,082	\$26,347.40	3,066	\$2,934.89	184,021	\$7,633.98
Fire - Station #20	13,573	186,920	\$21,741.65	1,637	\$1,758.26	85,278	\$4,299.56
Fire - Station #21	19,116	266,816	\$26,722.00	2,896	\$2,736.13	225,911	\$7,195.35
Fire - Station #30	14,435	208,445	\$19,707.16	2,117	\$2,121.52	119,688	\$6,660.72
Fire - Station #31	17,311	187,256	\$22,559.84	1,988	\$2,092.02	106,986	\$1,202.21
Fire - Station #33	15,533	184,013	\$20,746.04	2,335	\$2,263.54	74,057	\$4,594.33
Fire - Station #35	11,586	115,280	\$12,820.23	2,969	\$2,868.73	145,870	\$6,459.15
Police -Midtown Hills Precinct	21,846	616,300	\$59,644.81	480	\$897.64	154,846	\$6,521.05
Police - West Precinct	25,698	888,300	\$79,246.32	476	\$899.06	98,743	\$8,466.24
Howard Office Building	139,027	2,789,697	\$256,091.55	100,230	\$29,916.65	3,361,786	\$51,732.94
Lindsley Hall	34,198	316,085	\$33,265.38	24,655	\$7,358.93	826,936	\$12,725.32
MAC - Douglass Head Start	26,625	213,000	\$31,535.21	1,363	\$1,673.66	465,288	\$12,005.27
Highland Heights - KIPP Academy	92,459	1,471,200	\$136,908.80	2,618	\$2,727.96	213,943	\$14,547.58
Library - Bellevue Branch	24,912	511,440	\$50,568.69	108	\$650.42	410,600	\$4,483.10
Southeast Davidson Library & Community Center	80,600	1,072,200	\$104,290.62	5,716	\$5,255.02	1,073,841	\$14,883.10
Lentz Public Health Center	107,474	2,621,400	\$245,248.00	86,813	\$64,194.80	1,896,309	\$31,087.89
Police - Madison Precinct & Crime Lab	84,420	3,356,400	\$320,770.20	57,043	\$43,659.76	635,843	\$3,381.64
Police – Headquarters & Family Safety Center	166,366	2,826,638	\$269,025.96	98,346	\$72,297.81	1,852,174	\$21,856.66
Bellevue Community Center*	47,868	575,818	\$54,803.55	4,504	\$4,120.86	1,054,625	\$10,474.52

\*The LEED building is named Bellevue Ice & Community Center. General Services only manages the Community Center part of the facility and does not manage the Ice Center; therefore, only the Community Center part of the facility is included in this report.

The following chart shows the energy performance of the LEED® buildings. A building’s Energy Utilization Index, or EUI, varies according to factors such as age, use, controls, envelope efficiency, etc.



This report will compare the EUI of these LEED® buildings to local benchmarks as well as regional benchmarks. Local comparison buildings were chosen according to the following requirements:

- Of similar size as the comparable LEED® building,
- Serve a similar function as the comparable LEED® building,
- Geographically located within Davidson County, and
- Cannot be a LEED® or high performance building.

Southern Regional benchmark data was obtained from the Department of Energy’s 2012 Commercial Building Energy Consumption Survey (CBECS). CBECS is a national sample survey of U.S. commercial buildings and

provides the gross energy utilization index for the sum of major fuels for different building types and 2012 is the most recent CBECS data available.

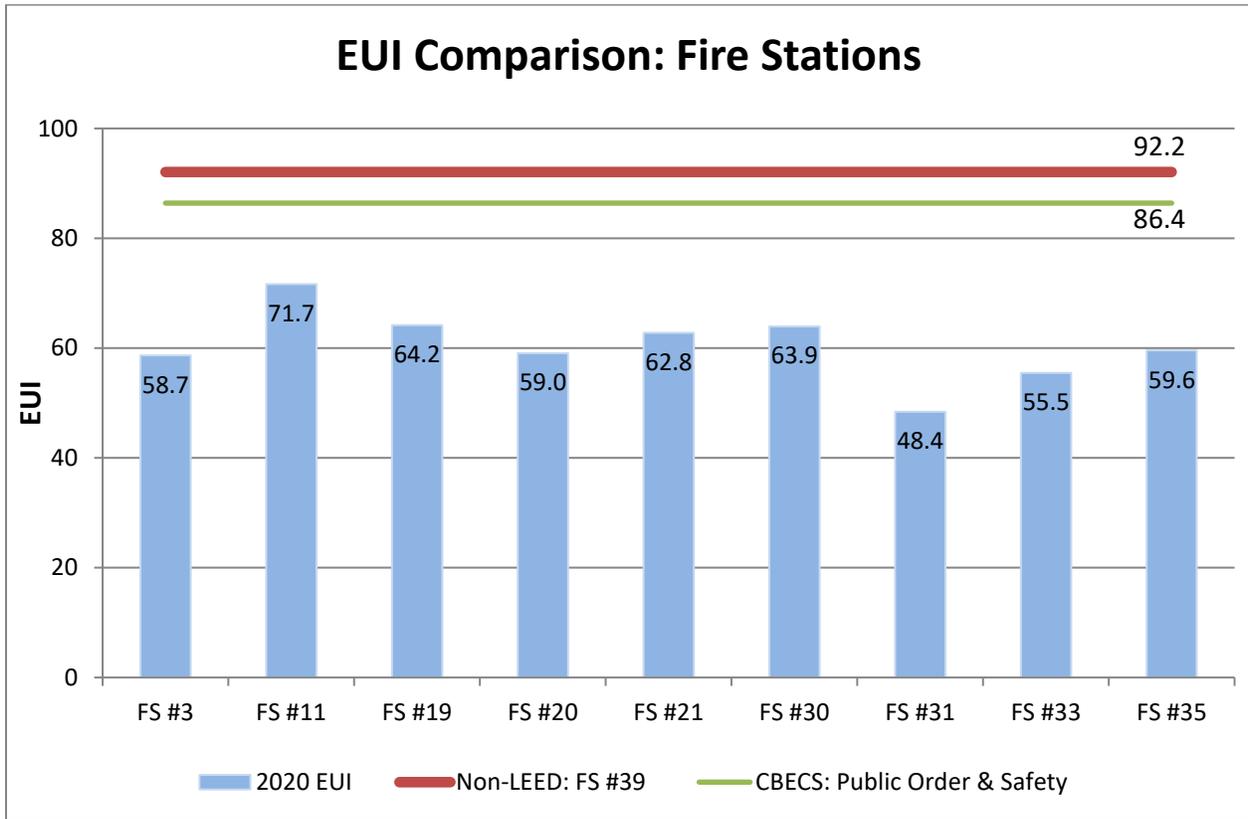
The following comments pertain to the energy cost comparisons done for each group of buildings:

- Commercial electricity bills include both electricity usage charges and electricity demand charges. Best practice is to calculate *energy cost per square foot* by excluding the electricity demand charges. Energy costs for this calculation thus consist of the sum of electricity usage charges and natural gas charges.
- For the CBECS benchmark, the mean square footage per building type is shown as a comparison. The energy cost for the CBECS benchmark is derived from the sum of the major fuel expenditures in millions of dollars, divided by the total floor space in millions of square feet for the sample group of buildings. This is not meant to be an accurate reflection of energy cost but a reference point.
- The annual savings were calculated by comparing the BTUs for the LEED® building and the comparison building (for the same square footage) and multiplying the difference by the average cost per BTU. The annual savings are thus dependent on the EUI of the buildings and do not necessarily correlate to the energy cost per square foot.

## Fire Stations

### Energy Consumption

Energy consumption for the nine LEED® Fire Stations is compared in the graph below to the non-LEED® Fire Station #39 as well as to the Southern regional CBECS benchmark for a similar type building. As the graph shows, General Services’ LEED® fire stations performed better than both the comparable non-LEED® building and the regional benchmark.



Energy costs for the nine LEED® Fire Stations are compared in the following table to the non-LEED® Fire Station #39 as well as to the Southern region CBECS benchmark for a similar type building (Public Order & Safety).

	Building sf	Energy Cost/sf	EUI	Annual savings compared to non-LEED® FS #39	Annual savings compared to regional benchmark
Fire - Station #3	17,469	\$1.52	58.7	\$16,448.74	\$13,659.77
Fire - Station #11	15,587	\$1.56	71.7	\$7,665.23	\$5,536.07
Fire - Station #19	20,142	\$1.31	64.2	\$14,155.29	\$11,278.52
Fire - Station #20	13,573	\$1.58	59.0	\$13,139.37	\$10,885.01
Fire - Station #21	19,116	\$1.38	62.8	\$13,745.70	\$11,087.43
Fire - Station #30	14,435	\$1.36	63.9	\$9,603.58	\$7,669.59
Fire - Station #31	17,311	\$1.31	48.4	\$22,247.51	\$19,361.85
Fire - Station #33	15,533	\$1.35	55.5	\$15,191.52	\$12,841.06
Fire - Station #35	11,586	\$1.24	59.6	\$8,556.10	\$7,064.33
Non-LEED®: FS #39	9,595	\$1.58	92.1		
CBECS: Public Order & Safety	14,800	\$1.67	86.4		
<b>Total</b>				<b>\$120,753.05</b>	<b>\$99,383.64</b>

### Water Consumption

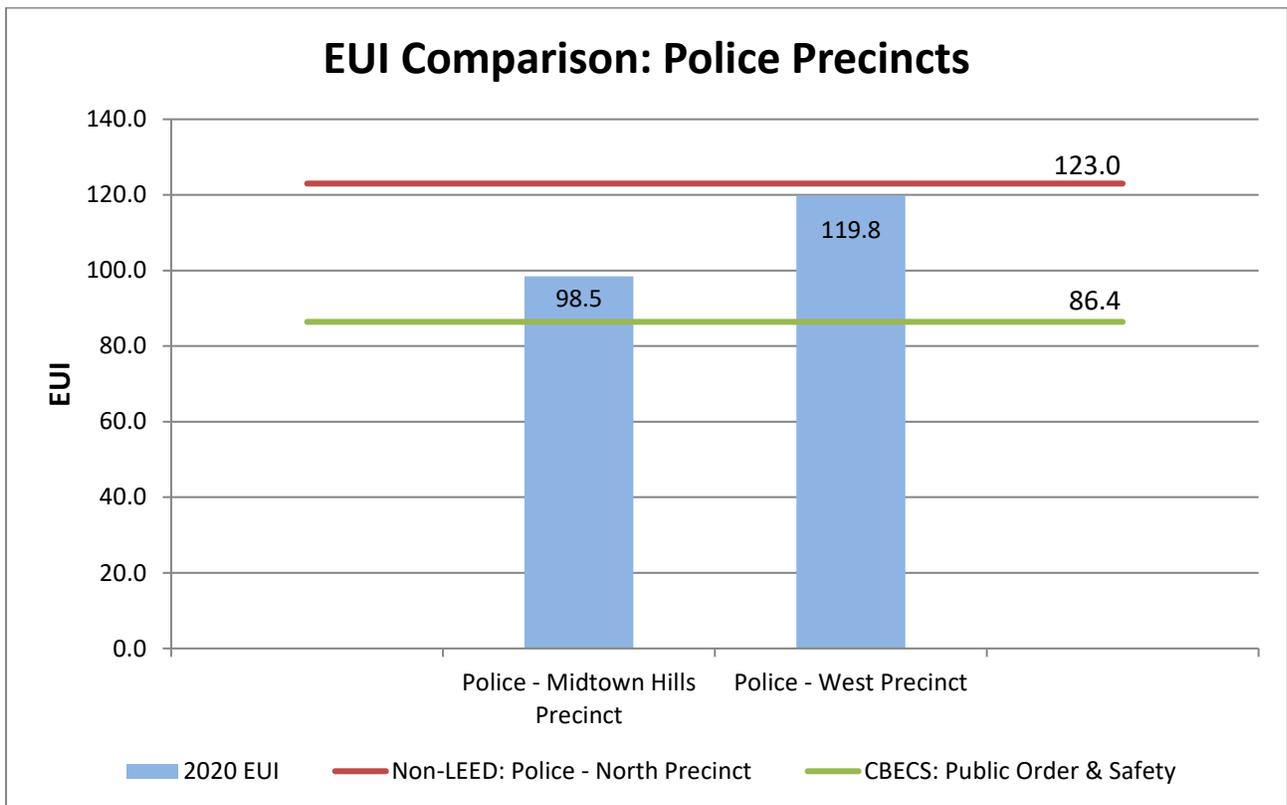
Water consumption and comparisons to the non-LEED® Fire Station #39 are shown in the table below. The water intensity (gallons used/square feet) is compared, as well as the water usage after accounting for the different sizes in buildings. For instance, if Fire Station #39 was the same size as Fire Station #31, Fire Station #31 would use 231,743 gallons less water than Fire Station #39 during calendar year 2020.

	Building sf	Water Consumption (gallons)	Water usage/sf	Water savings compared to FS #39 (gallons)
Fire - Station #3	17,469	175,792	10.1	166,029
Fire - Station #11	15,587	183,272	11.8	121,723
Fire - Station #19	20,142	184,021	9.1	210,103
Fire - Station #20	13,573	85,278	6.3	180,309
Fire - Station #21	19,116	225,911	11.8	148,137
Fire - Station #30	14,435	119,688	8.3	162,765
Fire - Station #31	17,311	106,986	6.2	231,743
Fire - Station #33	15,533	74,057	4.8	229,881
Fire - Station #35	11,586	145,870	12.6	80,836
Non-LEED® comparable: FS #39	9,595	187,748	19.6	
<b>Total</b>				<b>1,531,526</b>

## Police Precincts

### Energy Consumption

Energy consumption for the two police precincts is compared in the graph below to the non-LEED® North Police Precinct as well as to the Southern regional CBECS benchmark for a similar type building (Public Order and Safety). Madison Police Precinct & Crime Lab is compared separately due to the unique operations of the crime lab.



Energy costs for the two police precincts are compared in the table below to the non-LEED® North Police Precinct as well as to the Southern regional CBECS benchmark for a similar type building (Public Order & Safety).

	Building sf	Energy Cost/sf	EUI	Annual savings compared to non-LEED® North PP	Annual savings compared to regional benchmark
Police - Midtown Hills Precinct	21,846	\$1.99	98.5	\$15,087.95	-\$7,412.12
Police - West Precinct	25,698	\$2.22	119.8	\$2,137.45	-\$22,341.73
Non-LEED®: North PP	21,378	\$2.03	123.0		
CBECS: Public Order & Safety	14,800	\$1.67	86.4		
<b>Total</b>				<b>\$17,225.40</b>	<b>-\$29,753.85</b>

- For West Police Precinct, the square footage for the parking garage was not included in the building square footage, but the electricity consumption for the lighting in the parking garage is included in the energy metrics since it is not separately metered.

### *Water Consumption*

Water consumption comparisons to the non-LEED® North Police Precinct are shown in the table below.

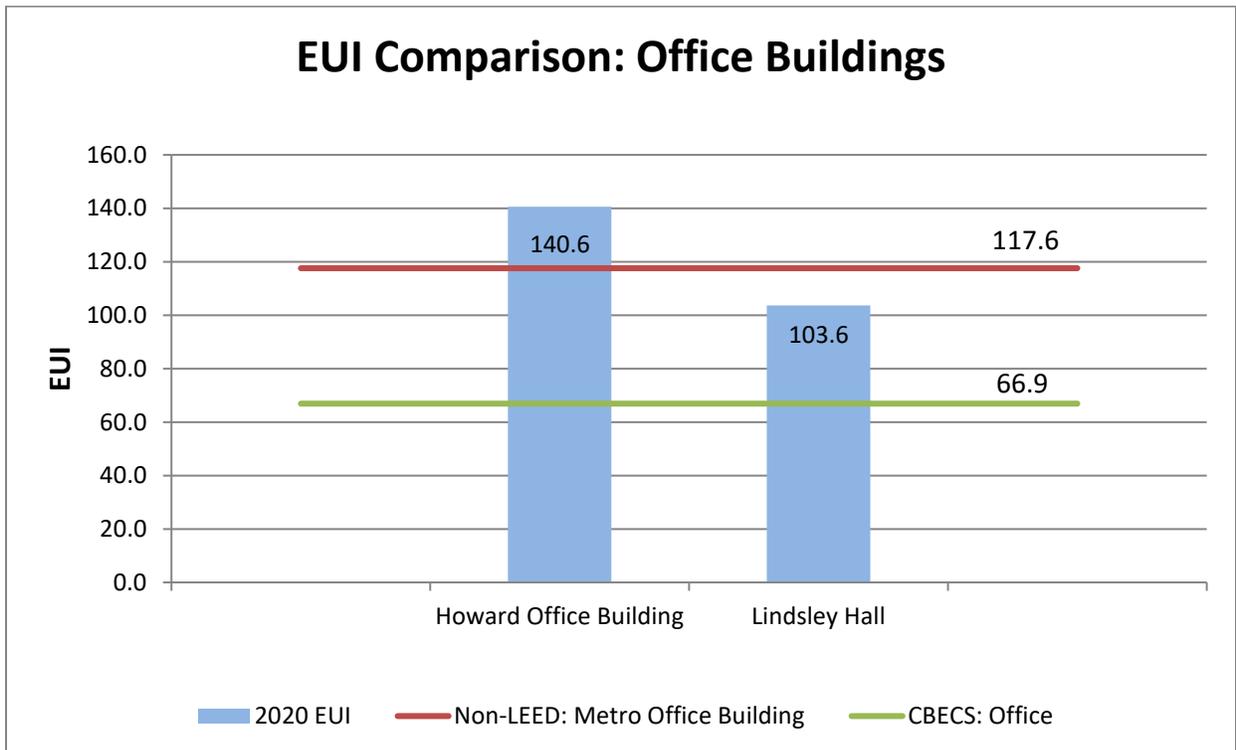
	Building sf	Water Consumption (gallons)	Water usage/sf	Water savings compared to North PP (gallons)
Police - Midtown Hills Precinct	21,846	154,846	7.1	19,431
Police - West Precinct	25,698	98,743	3.8	106,264
Non-LEED®: North PP	21,378	170,544	8.0	
<b>Total</b>				<b>125,696</b>

- The water used by the Edgehill Community Garden is separately metered and was not included in the Midtown Hills water usage.

## Office Buildings

### Energy Consumption

Energy consumption for the two office buildings is compared in the graph below to the non-LEED® Metro Office Building as well as to the Southern regional CBECS benchmark for a similar type building.



- Electricity usage of the data centers at Howard Office Building was not included in the calculations.
- The cooling tower electricity is part of the Howard Office Building, but it contributes to Lindsley Hall and Metro Office Building too. The total energy of the cooling tower was divided by square footage per building.

Energy costs for the two office buildings are compared in the following table to the non-LEED® Metro Office Building as well as to the Southern regional CBECS benchmark for a similar type building (Office).

	<b>Building sf</b>	<b>Energy Cost/sf</b>	<b>EUI</b>	<b>Annual savings compared to non-LEED® Metro Office Building</b>	<b>Annual savings compared to regional benchmark</b>
Howard Office Building	139,027	\$1.34	140.6	-\$43,072.58	-\$147,777.43
Lindsley Hall	34,198	\$1.05	103.6	\$4,212.23	-\$15,112.24
<b>Non-LEED®: Metro Office Building</b>	<b>68,383</b>	<b>\$1.02</b>	<b>117.6</b>		
<b>CBECS: Office</b>	<b>14,100</b>	<b>\$1.69</b>	<b>66.9</b>		
<b>Total</b>				<b>-\$38,860.35</b>	<b>-\$162,889.67</b>

### *Water Consumption*

Water consumption at the two office buildings and comparisons to the non-LEED® Metro Office Building are shown in the table below.

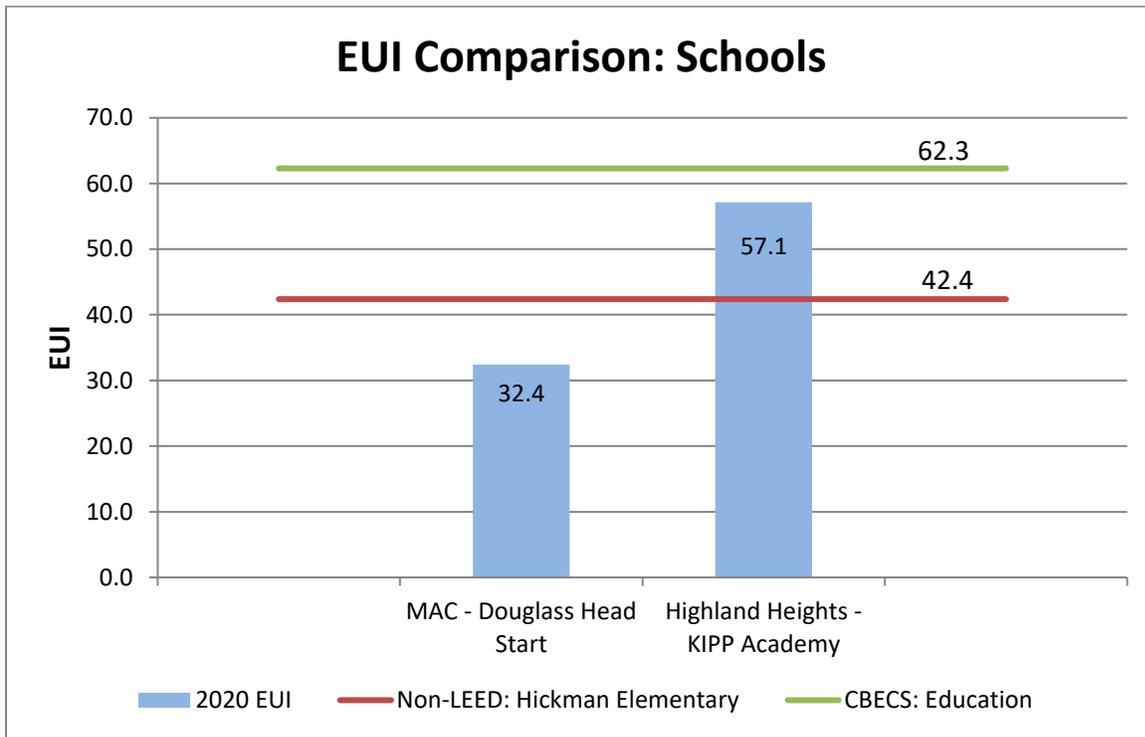
	<b>Building sf</b>	<b>Water Consumption (gallons)</b>
Howard Office Building	139,027	3,361,786
Lindsley Hall	34,198	826,936
<b>Non-LEED®: Metro Office Building</b>	<b>68,383</b>	<b>1,653,444</b>

- The water meters on the Richard H. Fulton Campus service multiple buildings; therefore, for this analysis, water usage is appropriated to each building solely according to square footage. This report does not compare the water usage for Lindsley and Howard with the water usage for Metro Office Building.

## Schools

### Energy Consumption

Energy consumption for the two schools is compared in the graph below to the non-LEED® Hickman Elementary as well as to the Southern regional CBECS benchmark for a similar type building.



Energy costs for the two schools are compared in the following table to the non-LEED® Hickman Elementary, as well as to the Southern regional CBECS benchmark for a similar type building (Education).

	Building sf	Energy Cost /sf	EUI	Annual savings compared to non-LEED® Hickman Elementary	Annual savings compared to regional benchmark
MAC - Douglass Head Start	26,625	\$0.89	32.4	\$10,211.88	\$30,616.42
Highland Heights – KIPP Academy	92,459	\$0.97	57.1	-\$36,031.59	\$12,655.17
Non-LEED®: Hickman Elementary	71,466	\$0.71	42.4		
CBECS: Education	32,500	\$1.35	62.3		
<b>Total</b>				<b>-\$25,819.71</b>	<b>\$43,271.59</b>

### *Water Consumption*

Water consumption at the two schools and comparisons to the non-LEED® Hickman Elementary building are shown in the table below.

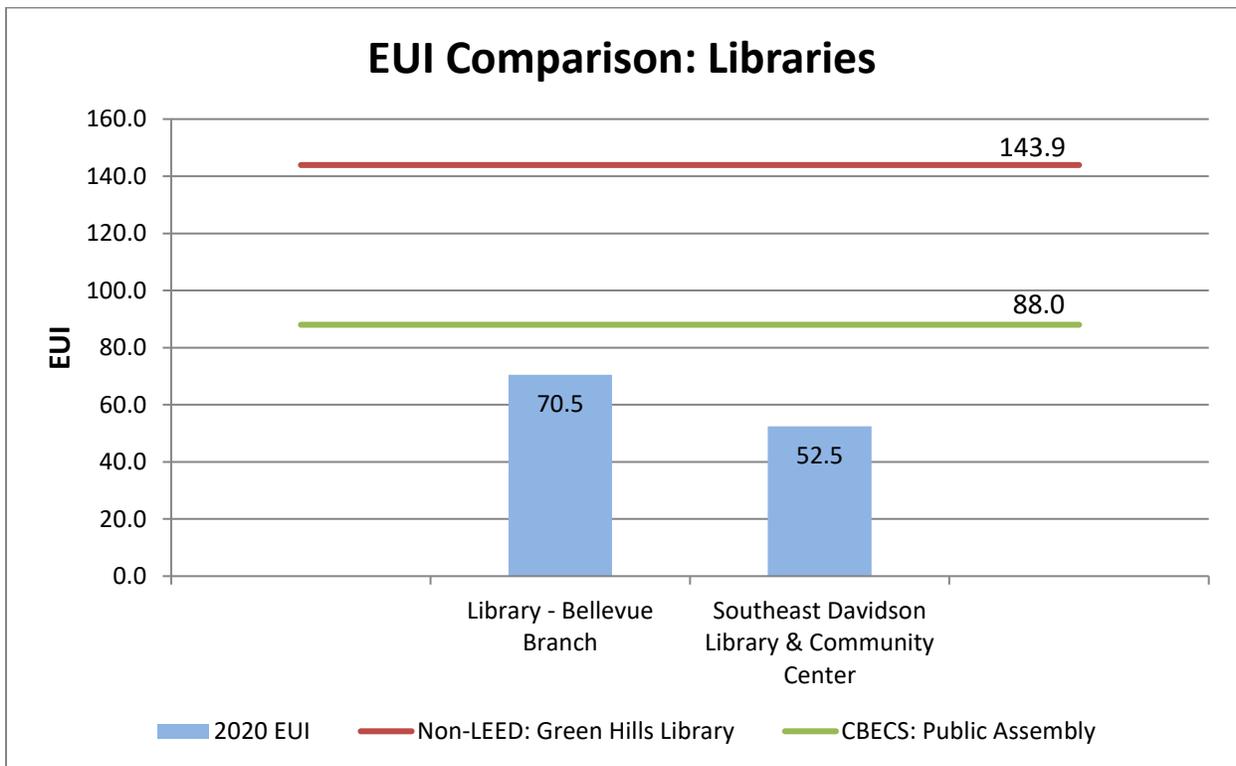
	<b>Building sf</b>	<b>Water Consumption (gallons)</b>	<b>Water usage/sf</b>	<b>Water savings compared to Hickman (gallons)</b>
MAC - Douglass Head Start	26,625	465,288	17.5	-338,045
Highland Heights – KIPP Academy	92,459	213,943	2.3	227,923
Non-LEED®: Hickman Elementary	71,466	341,539	4.8	
<b>Total</b>				<b>-110,122</b>

## Libraries

### Energy Consumption

Energy consumption for the two libraries is compared in the graph below to the non-LEED® Green Hills Library as well as to the Southern regional CBECS benchmark for a similar type building.

The Southeast Davidson Regional Community Center houses a community center as well as a library. For this report, the building is compared to a non-LEED® library.



Energy costs for the two libraries are compared in the table below to the non-LEED® Green Hills Library as well as to the Southern regional CBECS benchmark for a similar type building (Public Assembly).

	<b>Building sf</b>	<b>Energy Cost /sf</b>	<b>EUI</b>	<b>Annual savings compared to non-LEED® Green Hills Library</b>	<b>Annual savings compared to regional benchmark</b>
Library - Bellevue Branch	24,912	\$1.50	70.5	\$53,364.77	\$12,730.81
Southeast Davidson Library & Community Center	80,600	\$0.89	52.5	\$190,856.26	\$74,141.16
Non-LEED®: Green Hills Library	25,540	\$1.85	143.9		
CBECs: Public Assembly	18,200	\$1.83	88.0		
<b>Total</b>				<b>\$244,221.03</b>	<b>\$86,871.97</b>

### *Water Consumption*

Water consumption at the two library buildings and comparisons to the non-LEED® Green Hills library is shown in the table below.

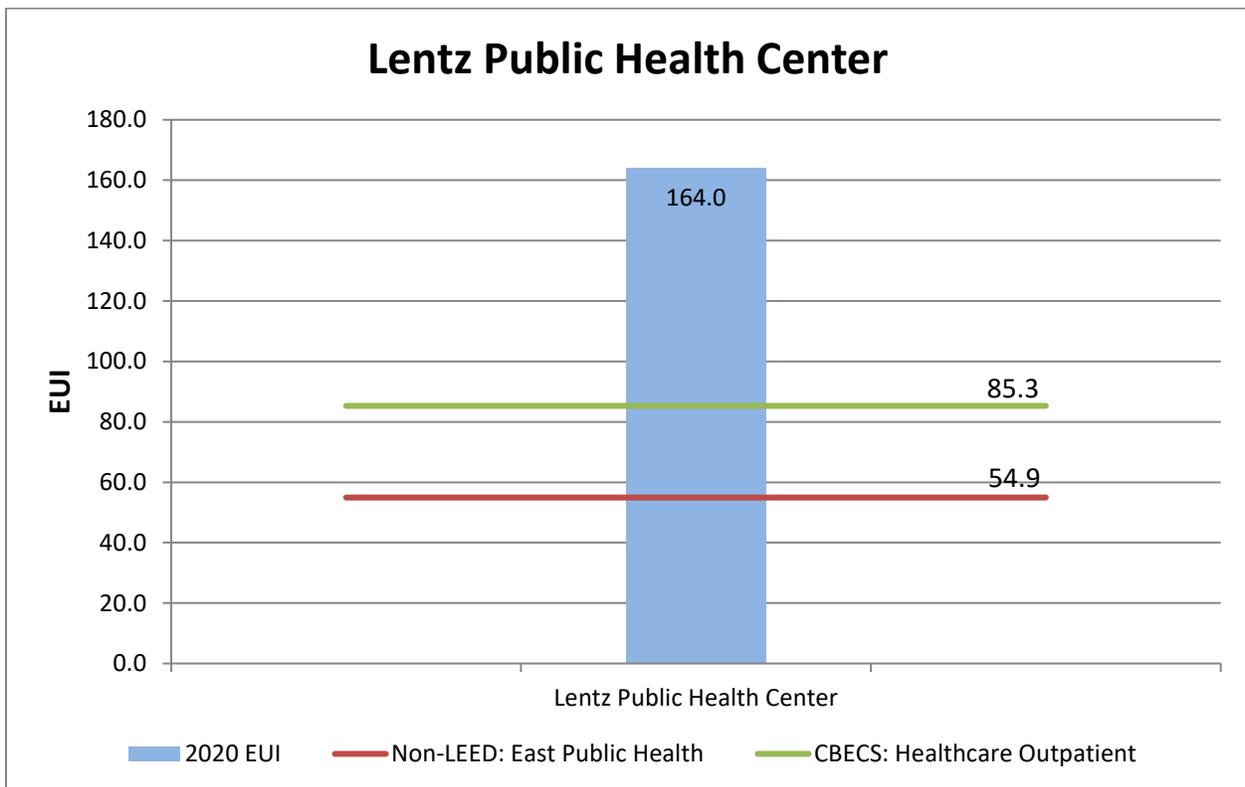
	<b>Building sf</b>	<b>Water Consumption (gallons)</b>	<b>Water usage/sf</b>	<b>Water savings compared to Green Hills (gallons)</b>
Library - Bellevue Branch	24,912	410,600	16.5	70,941
Southeast Davidson Library & Community Center	80,600	1,073,841	13.3	484,131
Non-LEED®: Green Hills Library	25,540	493,680	19.3	
<b>Total</b>				<b>555,072</b>

- The water meter at SE Davidson Library and Community Center is combined with Ford Ice Center Antioch. Because the water usage is not sub-metered, the chart above splits these two facilities according to square footage. Note that this estimate does not equate an exact division of water consumption because without sub-metering, it is difficult to draw an accurate picture of water consumption between the buildings.

## Lentz Public Health Center

### Energy Consumption

Energy consumption for Lentz is compared in the graph below to the non-LEED® East Public Health as well as to the Southern regional CBECS benchmark for a similar type building.



Lentz has a high energy usage for operations since there are multiple clinics within the building, special coolers to keep vaccines, and specialized air handling equipment to accommodate tuberculosis areas. It is difficult to find a comparable public service building in Davidson County of similar size.

East Public Health was closed from March through July 2020, there after opening at low capacity for scheduled appointments only. Unoccupancy settings were used for most of the year. In contrast, Lentz went from being occupied 5 days per week to 7 days per week during the pandemic.

The energy cost for Lentz is compared in the table below to the non-LEED® East Public Health as well as to the Southern regional CBECS benchmark for a similar type building (Healthcare Outpatient).

	<b>Building sf</b>	<b>Energy Cost /sf</b>	<b>EUI</b>	<b>Annual savings compared to non-LEED® East Public Health</b>	<b>Annual savings compared to regional benchmark</b>
Lentz Public Health Center	107,474	\$1.95	164.0	<b>-\$205,761.71</b>	<b>-\$148,492.81</b>
Non-LEED®: East Public Health	13,800	\$1.18	54.9		
CBECS: Healthcare Outpatient	11,000	\$2.06	85.3		

### *Water Consumption*

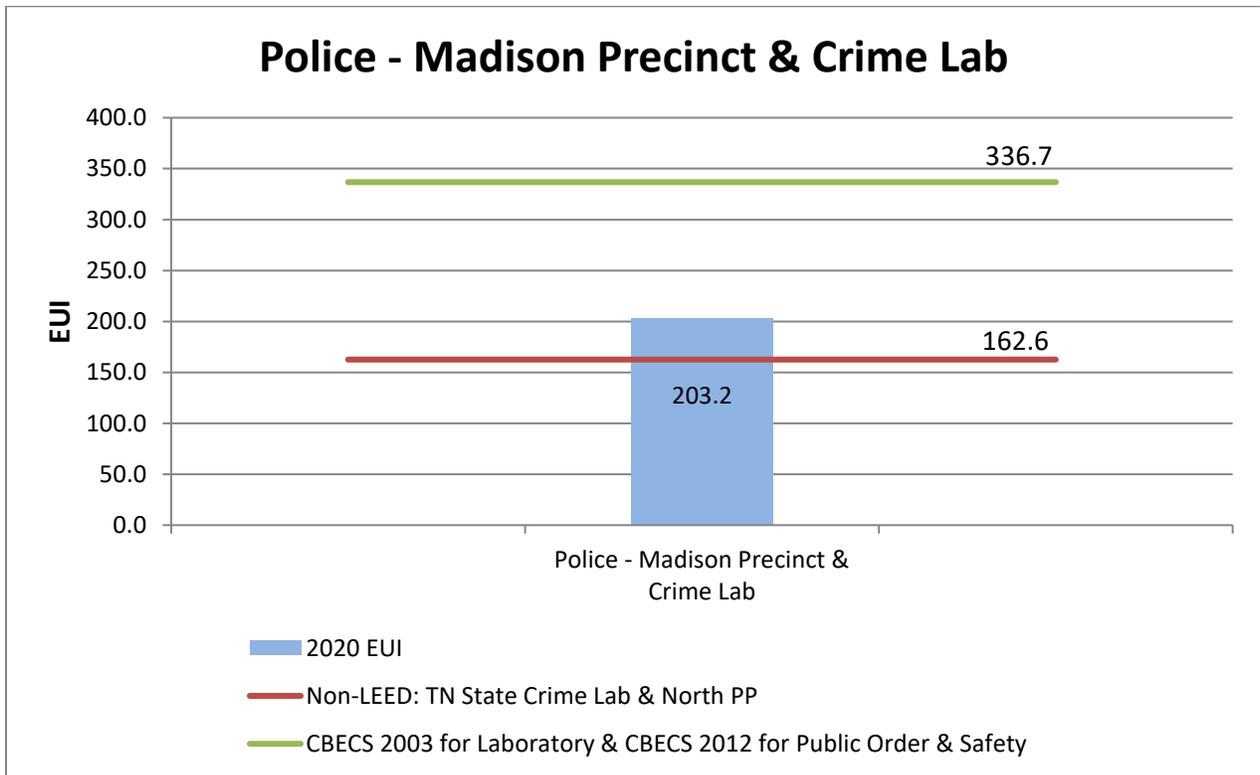
Water consumption at Lentz and a comparison to the non-LEED® East Public Health water usage are shown in the table below.

	<b>Building sf</b>	<b>Water Consumption (gallons)</b>	<b>Water usage/sf</b>	<b>Water savings compared to East Public Health (gallons)</b>
Lentz Public Health Center	107,474	1,896,309.29	17.6	-1,418,626
Non-LEED®: East Public Health	13,800	61,336	4.4	
<b>Total</b>				<b>-1,418,626</b>

## Police - Madison Precinct & Crime Lab

### Energy Consumption

Energy consumption for Madison Precinct & Crime Lab is compared in the graph below to the non-LEED® TN State Crime Lab & North Police Precinct as well as to the regional CBECS benchmark for a similar type building. The Madison building consists of a police station (first floor) and a crime lab (second floor). For the non-LEED® comparison, the data from North Police Precinct was combined with the data from the TN State Crime Lab in Nashville. The regional benchmark was calculated by combining the EUI for Public Order & Safety (Southern region) with the national EUI for a laboratory space.



The energy cost for Madison Precinct & Crime Lab is compared in the following table to the non-LEED® TN State Crime Lab in Nashville & North Police Precinct composite building as well as to the regional CBECS benchmark for a similar type building (Laboratory combined with Public Order & Safety). Note that Madison Precinct has a community meeting room.

	Building sf	Energy Cost /sf	EUI	Annual savings compared to non-LEED® North PP & TN State Crime Lab	Annual savings compared to regional benchmark
Madison Precinct & Crime Lab	84,420	\$2.70	203.2	-\$72,898.94	\$239,407.91
Non-LEED®: TN State Crime Lab in Nashville & North PP	164,000&21,378	\$2.48	162.6		
CBECS: Laboratory & Public Order & Safety			336.7		

- The CBECS tables do not contain the mean square footage or energy cost data for a Laboratory, thus no average building square footage or energy cost per square foot can be provided in the table for a regional benchmark building but the projected cost savings are based on the EUI in the table.

### *Water Consumption*

Water consumption at the Madison Precinct & Crime Lab was compared to the combination building of the non-LEED® TN State Crime Lab in Nashville and North Police Precinct in the table below. The water usage of North Police Precinct was adjusted to be from the same square footage as the first floor of Madison, and the water usage of the TN State Crime Lab was adjusted to be from the same square footage as the second floor of Madison.

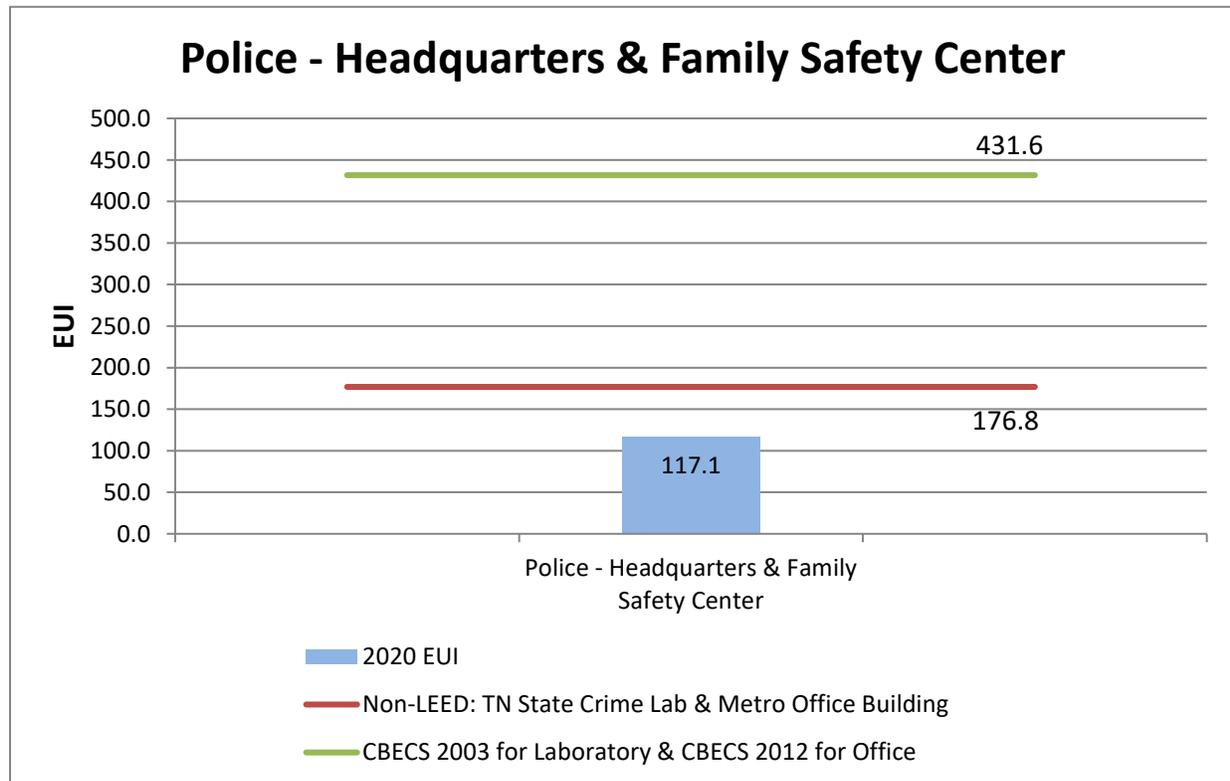
	Building sf	Water Consumption (gallons)	Water usage/sf	Water savings compared to TN State Crime Lab in Nashville & North PP (gallons)
Madison Precinct & Crime Lab	84,420	635,843	7.5	378,691
Non-LEED®: TN State Crime Lab in Nashville	164,000	2,667,725	16.3	
Non-LEED®: North PP	21,378	170,544	8.0	
<b>Total</b>				<b>378,691</b>

## Police – Headquarters & Family Safety Center

### Energy Consumption

Energy consumption for the Police Headquarters and Family Safety Center is compared in the graph below to the non-LEED® TN State Crime Lab & Metro Office Building as well as to the Southern regional CBECS benchmark for a similar type building. The Metro building consists of a police station (that functions similarly to the TN State Crime Lab with a high volume of servers, equipment, and large mechanical systems) and a Family Safety Center that functions like an office building. For the non-LEED® comparison, the data from TN State Crime Lab in Nashville was combined with the data from Metro Office Building. The regional benchmark was calculated by combining the EUI for a laboratory space (national) with the EUI for an office (Southern region).

There is shell space in both the Police HQ and Family Safety Center that was not included in the total square footage. A portion of the shell space above MNPD HQ was occupied starting in October 2020 and therefore the space began being conditioned at this time. In addition to shell space, there is an unoccupied dedicated server room inside of the Police HQ. Due to the size of these areas, both the shells spaces and server room sq. ft. values have been removed to get a more accurate measurement of energy intensity. When these spaces become occupied for greater than six months, the square footage will be added to the building total.



The energy cost for the Police Headquarters & Family Safety Center is compared in the following table to the non-LEED® TN State Crime Lab in Nashville & Metro Office Building composite building as well as to the regional CBECS benchmark for a similar type building (Laboratory combined with Office).

	Building sf	Energy Cost /sf	EUI	Annual savings compared to non-LEED® North PP & TN State Crime Lab	Annual savings compared to regional benchmark
Police – Headquarters & Family Safety Center	166,366	\$1.47	117.1	\$166,876.32	\$878,386.95
Non-LEED®: TN State Crime Lab in Nashville & Metro Office Building	164,000&68,383	\$2.52	176.8		
CBECS: Laboratory & Office			431.6		

- The CBECS tables do not contain the mean square footage or energy cost data for a Laboratory, thus no average building square footage or energy cost per square foot can be provided in the table for a regional benchmark building but the projected cost savings are based on the EUI in the table.

### Water Consumption

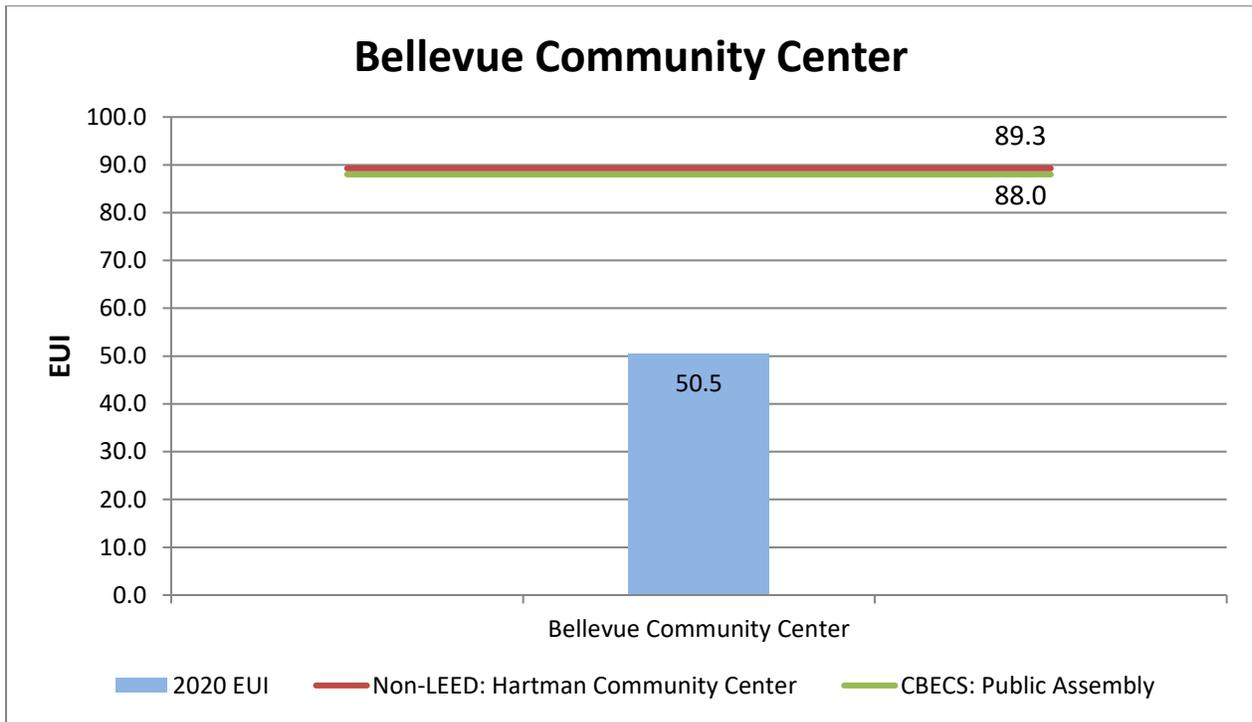
Water consumption at the Metro Police HQ and Family Safety Center was compared to the combination building of the non-LEED® TN State Crime Lab in Nashville and Metro Office Building in the table below. The water usage of the TN State Crime Lab was adjusted to be from the same square footage as the Metro Police HQ building, and the water usage of Metro Office Building was adjusted to be from the same square footage as the Family Safety Center.

	Building sf	Water Consumption (gallons)	Water usage/sf	Water savings compared to TN State Crime Lab in Nashville & North PP (gallons)
Police - Headquarters & Family Safety Center	166,366	1,852,174	11.1	1,269,794
Non-LEED®: TN State Crime Lab in Nashville	164,000	2,667,725	16.3	
Non-LEED®: Metro Office Building	68,383	1,653,444	24.2	
<b>Total</b>				<b>1,269,794</b>

## Bellevue Community Center

### Energy Consumption

Energy consumption for the Bellevue Community Center is compared in the graph below to the non-LEED® Hartman Community Center as well as to the Southern regional CBECS benchmark for a Public Assembly type building.



The energy cost for Bellevue Community Center is compared in the following table to the non-LEED® Hartman Community Center in Nashville as well as to the regional CBECS benchmark for a similar type building.

	Building sf	Energy Cost /sf	EUI	Annual savings compared to non-LEED® Hartman Community Center	Annual savings compared to regional benchmark
Bellevue Community Center	47,868	\$0.75	50.5	\$45,334.71	\$43,851.14
Non-LEED®: Hartman Community Center	34,435	\$1.09	89.3		
CBECS: Public Assembly	18,200	\$1.83	88.0		

### *Water Consumption*

Water consumption at Bellevue Community Center was compared to the non-LEED® Hartman Community Center in Nashville in the table below.

	<b>Building sf</b>	<b>Water Consumption (gallons)</b>	<b>Water usage/sf</b>	<b>Water savings compared to Hartman Community Center (gallons)</b>
Bellevue Community Center	47,868	1,753,546	36.6	-630,492
Non-LEED®: Hartman Community Center	34,435	807,896	23.5	
<b>Total</b>				<b>-630,492</b>

- Bellevue Community's water consumption includes domestic water use for only the Community Center and also includes irrigation for the entire facility for both the Community Center and Ice Center. Irrigation is needed to ensure the health of the new landscape plants and trees survive through the first two-years of being planted.
- The comparison facility Hartman Community Center does not have irrigation.

## Solar Production

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The rooftop solar panels on ten Department of General Services' buildings produced 705,234 kWh during 2020, resulting in a combination of cost savings and rebates of \$88,784. Fire Station #19, the Police Headquarters & Family Safety Center and Bellevue Community Center use the solar energy behind the meter, thus the generated electricity is used on site resulting in lower electricity bills. The percentage of solar generation consumed to offset total electricity consumption for these facilities are as follows: 13.3% of the electricity consumed by Fire Station #19, 13.1% of the electricity consumed by the Police Headquarters & Family Safety Center, and 30.3% of the electricity consumed by Bellevue Community Center. The value of this electricity is shown in the following table:

<b>Rooftop solar facility</b>	<b>Size of Array (kW)</b>	<b>2020 Production (kWh)</b>	<b>Solar Generation Revenue</b>
Howard Office Building	29.89	32,673	\$6,647.79
Fire - Station #3	8.64	10,722	\$2,362.44
Fire - Station #11	10.50	11,623	\$2,213.00
Fire - Station #19	33.80	38,562	\$4,055.60
Fire - Station #21	7.92	5,244	\$1,018.67
Fire - Station #30	18.00	22,247	\$4,237.83
Fire - Station #31	8.64	7,881	\$1,737.45
Fire - Station #33	7.92	10,035	\$2,212.54
Police Headquarters & Family Safety Center	302.40	369,267	\$40,426.30
Bellevue Community Center	150.28	196,980	\$23,872.27
<b>Total</b>	<b>577.99</b>	<b>705,234</b>	<b>\$88,783.88</b>

# Appendix 1: Square Footage of Buildings

This list includes the Department of General Services LEED® facilities and their non-LEED® comparisons:

High Performance Building	Square Footage
<b>Fire Stations</b>	
Fire - Station #3	17,469
Fire - Station #11	15,587
Fire - Station #19	20,142
Fire - Station #20	13,573
Fire - Station #21	19,116
Fire - Station #30	14,435
Fire - Station #31	17,311
Fire - Station #33	15,533
Fire - Station #35	11,586
Non-LEED®: Fire - Station #39	9,595
<b>Police Precincts</b>	
Police - Midtown Hills Precinct	21,846
Police - West Precinct	25,698
Non-LEED®: North Police Precinct	21,378
<b>Office Buildings</b>	
Lindsley Hall	34,198
Howard Office Building	139,027
Non-LEED®: Metro Office Building	68,383
<b>Schools</b>	
MAC - Douglass Head Start	26,625
Highland Heights – KIPP Academy	92,459
Non-LEED®: Hickman Elementary	71,466
<b>Libraries</b>	
Library - Bellevue Branch	24,912
Southeast Davidson Library & Community Center	80,600
Non-LEED®: Green Hills Library	25,540
<b>Lentz Public Health Center</b>	
Lentz Public Health Center	107,474
Non-LEED®: East Public Health	13,800
<b>Police - Madison Precinct &amp; Crime Lab</b>	
Police - Madison Precinct & Crime Lab	84,420
Non-LEED®: TN State Crime Lab/North Police Precinct	164,000/21,378
<b>Police Headquarters &amp; Family Safety Center</b>	

Police Headquarters & Family Safety Center	166,366
Non-LEED®: TN State Crime Lab/Metro Office Building	164,000/68,383
<b>Bellevue Community Center</b>	
Bellevue Community Center	47,868
Non-LEED®: Hartman Community Center	34,435